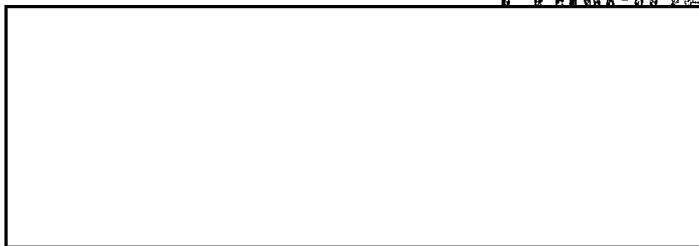


**CONFIDENTIAL**GROUP - 1  
Excluded from  
Automatic  
Downgrading and  
declassification#65.001  
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25X1



5 January 1965

Please Reference:  
A51-65-3105

25X1

U. S. Government

Declass Review by  
NIMA/DOD

Sales Order 1-10025-1

Gentlemen:

We are pleased to provide the fifth in a series of Monthly Progress Reports covering the effort expended on subject contract during the period December 2, 1964 to January 1, 1965.

Clean Room Erection

The erection of the clean room is progressing according to schedule. The main floor and all walls are erected with the exception of certain panels containing access provisions to plumbing and electrical supplies. The return air ducts have been installed below the floor with the vertical return portion installed on the north wall of the clean room. The air conditioning contractor agreed to provide a removable panel in the bottom of the vertical duct connected to each air return opening in the floor. These panels will permit the ducts to be drained rapidly in the event of spillage of photographic solutions.

The air shower and air locks have been installed. Changes were made to the wiring of these to conform to local requirements. The main entrance air shower blowers were removed from the top of the shower and mounted on a separate platform above a main beam that for structural reasons could not be cut into. Separate inter-connecting duct assemblies are in the course of construction.

The stainless steel air supply ducts are in the process of installation in the roof of the building.

The dark room light assemblies which were not Underwriter Laboratory approved have been given a verbal clearance by the Department of Power, subject to minor changes, which enables the assembly of the ceiling structure and hook-up to power to be commenced.

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The main effort during the next reporting period will center on the installation of the air conditioning equipment on the roof, assembly of the clean room ceilings and light fixtures, and wiring of the clean room and air conditioning system to the supply and control panels.

#### Area Preparation

Preparation of the support facility for the clean room is progressing satisfactorily. All rough partitioning has been completed and in most cases, at least one side of the partitions has been enclosed.

The existing electrical wiring of the area, and the main distribution panels supplying the shop area have been removed and where necessary relocated. New wiring has been roughed in and inspected. The new main transformer and distribution panels are scheduled for delivery on January 15, 1965.

The completion of wiring, plumbing and finishing of walls and floors is anticipated during the next reporting period.

In the area of research, work has proceeded on the program outlined in the report of December 3, 1964.

#### Assessment of Film Drag Parameters.

A floating test rig has been constructed to measure the coefficient of friction drag of film through water over a wide range of speeds. It is anticipated that these tests will be completed shortly and the data reduced in the next reporting period.

#### Liquid Bearings.

As a result of the flow, pressure, slot configuration and bearing diameter tests carried out to date, a bearing has been designed and is approximately fifty percent complete in manufacture. This bearing will be completed and functioning tests carried out shortly. The main features looked for in this bearing are stability and a self-centering capability without the use of guide flanges. A test model of a second type of liquid bearing is in an early stage of manufacture. This bearing, which presents a radical departure from designs previously used, is also based on a self-centering flangeless concept, but in addition contains the feature of a built-in pump.

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A51-65-3105Air Bearings.

Two types of air bearings are being investigated, - one of a tunnel type, and the other consisting of a blower wheel surrounded by a contour flange and air outlet directors. A model of the latter is under test, and although providing a satisfactory air cushion, it requires further development. However, it appears to be a most promising concept.

Processing Module.

Design studies are proceeding on the problems associated with the design of a "clean" processing module complete with all power requirements. A study made of the proposed temperature control system indicates that the concept is theoretically sound.

Processing Data.

The development of film samples exposed with step wedges, resolution targets, and processed under controlled conditions at varying temperatures is proceeding with the charting of fog level, gamma and resolution charts. This data will enable the effect of processing temperatures, above those recommended by the film manufacturers, to be evaluated as a basis for establishing the design parameters for future processing machines. This study is necessary because there is no published data available from film manufacturers on the effect of elevated processing temperatures above those recommended.

The funds expended and/or committed to date are approximately  excluding any profit.

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If you should have any questions or desire further information, please feel free to contact us.

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Very truly yours,

MCM/bls

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